doubtless a slip, but in the particular reaction described is of some importance.

We feel sure that Mr. Crookes will receive the thanks of those interested in this subject in England for the care and completeness with which he has arranged and carried out the text-book.

OUR BOOK SHELF

Half-Hours among some English Antiquities. By Llewellynn Jewitt, F.S.A., &c. (London: Hardwicke and Bogue, 1877.)

THIS ought to be an extremely useful little manual to those who desire to obtain a knowledge of the various classes of antiquities to be found in England, both prehistoric and historic. Mr. Jewitt writes with full knowledge and in a manner that cannot fail to secure the attention of the reader. He theorises very little, confining himself mainly to a statement of facts in reference to the various objects included under the name of antiquities. He speaks of barrows, stone-circles, cromlechs, flint and stone implements, bronze instruments, Roman remains of various kinds, ancient pottery, arms and armour, sepulchral slabs and brasses, coins, church bells, glass, tiles, tapestry, personal ornaments. Thus, it will be seen, Mr. Jewitt's programme is extensive and varied, and although much cannot be said in the space at his command, his little work will prove a very useful introduction to works of a more special kind. Not its least valuable features are the illustrations—upwards of 300—which accompany the text.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*]

Centralism in Spectroscopy

IN NATURE, vol. xv. p. 489, there are some remarkable counter-assertions by Mr. Christie to certain of my matter-of-fact statements on your p. 449, of which the most pressing for me to notice is the paragraph wherein he declares that "the Edinburgh Observatory has, for the last *four* years, possessed *three* spectroscopes which are almost precisely identical with those used with such effect by Dr. Huggins."

I beg to say that the above is not the case, and for this, amongst other reasons, viz., that though three spectroscopes are there in part, they belong solely as yet to H.M. Office of Works in London, which office, moreover, decided long since to return all of them to their maker, in lieu of *one* new spectroscope. And Mr. Christie must have known of this perfectly well when he wrote the above paragraph, for the carpenters of the department, who fetched away, about nine months ago, the one and only collimator to all those three partial spectroscopes, in order to send it back to its maker, spoke, as a matter of notoriety, of Mr. Christie himself being the adviser of H.M. Office of Works in that transaction, as well as the designer of the one new spectroscope ordered by the London office to take the place of the former three, but not received here yet.

With regard to the other new, and far more important, *Greenwich* spectroscope, of which Mr. Christie both chides me for not waiting for the full account to appear, as he now intimates, in a forthcoming number of the *Proceedings* of the Royal Society, and also challenges me to discuss its principles with him at once, I beg to say that my former remarks had reference solely to the official *codex* of last year's work at the Royal Observatory, Greenwich, as published by the Royal Astronomical Society in their last Anniversary Report, at p. 162, where all the world both may, and I suppose was intended to, see it, and where Mr. Christie's name appears no more than it did in my letter. And as in that letter (at your page 450) I ventured to assign the *next* anniversary meeting of the same society as the limit of time within which the full practical value of the said new Greenwich spectroscope will have been arrived at, I do not think we can do better than wait for that time to arrive.

15, Royal Terrace, Edinburgh, April 6 PIAZZI SMYTH

Parhelia and Paraselenæ seen on March 20, 1877, and again on March 21, 1877, at Highfield House Observatory

PERHAPS this phenomenon is the most remarkable of the many somewhat similar ones that it has been my good fortune to witness during the last forty years, the chief features being brilliancy and persistency.

Fig. 1 represents the appearance at 8 A.M.: an ordinary halo of 22½° radius, with an elongated mock sun at the apex. This lasted till 9.30 A.M., when, in addition to the halo, $\alpha\,\beta$, and the mock sun, γ, there was a second circle, $\delta\,\epsilon$, of 45° radius, also having the true sun for its centre, an inverted portion of a third circle, $\eta\,\theta$, of 22½° radius having its centre 45° above the true sun; also a portion of a fourth circle, $\iota\,\kappa$, of 90° radius, whose centre was 90° below the sun. The mock sun, γ, was very bright and prismatic, as also was the circle, $\alpha\,\beta$. The other rings were colourless.

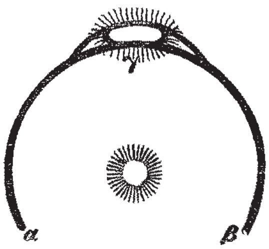

FIG. 1.—8 A.M.

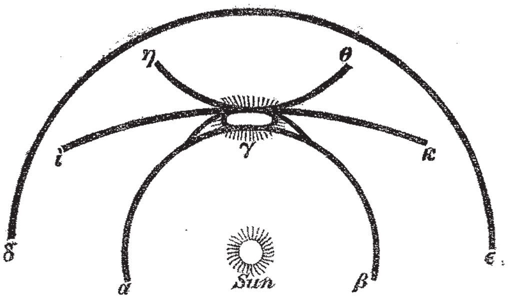

FIG. 2.—9.30 A.M.

At 9.40 A.M. the portions of circles $\eta\,\theta$ and $\iota\,\kappa$ had vanished, but a wing-like portion was now visible, and brilliant (see Fig. 3, $\lambda\,\omega$). This remained until 11.15 A.M., when only $\alpha\,\beta$ and the mock sun γ remained, lasting all the morning. At 12.57 P.M. the arc, $\iota\,\kappa$, again appeared, and was visible until 1.22 P.M., the halo, $\alpha\,\beta$, and the mock sun, γ, lasting till 5 P.M.

At 7.40 P.M. an ordinary lunar halo ($\alpha\,\beta$, Fig. 5), and at 8.25 P.M. a portion of a second circle, $\delta\,\epsilon$, of 45° radius, and of a third circle, $\iota\,\kappa$ (of 90° radius) and an elongated mock moon, γ, were very apparent. At 8.31 the ordinary lunar halo alone remained. At 9.10 a portion of a circle, $\upsilon\,o$, not quite 90° radius, appeared (see Fig. 6), but this did not touch the circle $\alpha\,\beta$, but was 10° above it. At 9.15 P.M. this also vanished, but the lunar halo remained as long as the moon was above the horizon.

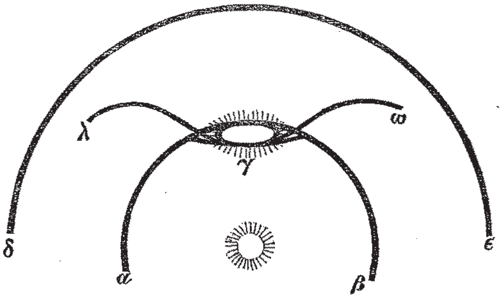

FIG. 3.

On March 21, at 8 A.M., there was a solar halo and mock sun exactly like the one seen at 8 A.M., March 20 (see

© 1877 Nature Publishing Group

Fig. 1), and this lasted all day, with the addition at 4 P.M. till 5.40 P.M. of the arc $\iota \kappa$ (being the exact copy of Fig. 4 of March 20); at 6 P.M. there was the ordinary circle $\alpha \beta$, the mock sun γ, and an inverted portion $\eta \theta$ (Fig. 2). At 6.10 only the ordinary halo remained.

From 8 P.M. till 9.40 P.M. (21st) there was a lunar halo with an elongated mock moon; so that a similar condition of the atmosphere prevailed for thirty-eight hours.

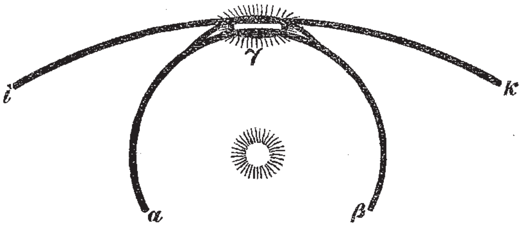

FIG. 4.

Whenever the circles were briliant, they were formed in a very thin haze-like cloud, through which the sun or moon (in either case) shone brightly.

The weather was cold with thick ice in the morning.

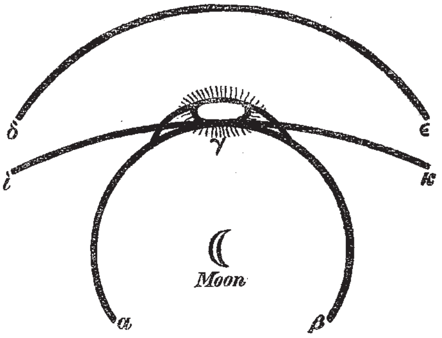

FIG. 5.

At 8 A.M. on the 20th the sky was scattered over with thin woolly cirri, indistinct in outline, and dirty-white in colour, with here and there a small prominent white portion (the sky resembling a sea with a few white wave-crests here and there). These clouds moved in a south current, but at 9 A.M. the clouds were again floating in a north-east current.

The wind on the 20th was north-east, and on the 21st north.

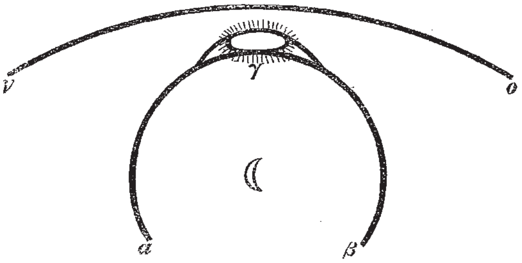

FIG. 6.

Temperature on 20th.	Dry bulb.	Wet bulb.	Temperature on 21st.	Dry bulb.	Wet bulb.
	°	°		°	°
8 A.M.	... 32·3	... 31·0	8 A.M.	... 35·0	... 32·7
1 P.M.	... 41·9	... 34·0	1 P.M.	... 42·1	... 34·0
6 P.M.	... 37·5	... 34·0	6 P.M.	... 39·7	... 33·6
11 P.M.	... 32·8	... 31·7	11 P.M.	... 30·0	... 28·3

March 22, solar halo and lunar halo.
,, 23, ,, ,,
,, 27, ,, ,,
,, 28, solar halo.
,, 30, lunar halo.

E. J. LOWE

Owens College

IT seems probable that the claims of Owens College to be constituted into a university and degree-giving body for the north of England, will soon be brought before the public in a more definite shape than that of newspaper correspondence. There are one or two considerations affecting the question, which do not seem to me to have been brought forward by any of those who have entered into the discussion, and I shall esteem it a favour if you will allow me briefly to notice these.

I may premise that no word in this letter is intended to derogate from any claims that Owens College may advance on the ground of past or prospective services to education in the district of England to which its efforts must be principally, though not entirely, confined. It is almost impossible to over-rate those claims, but when they are so put forward as to imply that Owens College is the only possible centre for giving degrees in the north of England, the dwellers on the banks of the Tyne, the Wear, and the Tees, are apt to feel that too little account is made both of the necessities and of the actual educational resources of their own part of the "north of England."

In the first place, a careful study of Bradshaw makes it clear that, for the counties of Durham and Northumberland, and even the north-east portion of Yorkshire, a university examination or college course is at least as accessible in London as at Manchester; so that for these counties the benefits of Owens College, whether as college or university, are practically on a par with those of University College, London, and the degree examinations of the University of London.

Secondly, it is a fact, although apparently unknown to the majority of those who have written on this question, that there already exists in the north of England—at Durham—a university with a Royal Charter for giving degrees in all faculties, and whose conditions for giving those degrees combine in an admirable manner the modern spirit with the strictness of the old requirements.

This university was originally founded by the liberality of the Cathedral authorities, who, with a spirit worthy of imitation elsewhere, set apart certain of their own funds for the purpose of giving a liberal education in arts and theology to students who for various reasons could not avail themselves of the advantages of Oxford and Cambridge. As always happens in such cases, benefactions of scholarships and fellowships have accrued which have considerably increased the funds available for educational purposes.

Nor have these funds been restricted, as many might expect, looking at the source from which they come, to sectarian purposes. While most of the colleges at Oxford and Cambridge were still compelling Jews and Nonconformists to attend religious services to which they objected, the regulations of the University of Durham anticipated the Universities' Tests Act by granting exemption in such cases; and during the last six years more than a thousand pounds a year of the university funds has been set aside for the purposes of the Science Faculty of the university which has its local habitation in Newcastle.

I may add that the Senate and Convocation of the university have in late years adopted a most liberal view in regard to the admission of students of other colleges than those at Durham and Newcastle to the degrees which they give, and I have personally little doubt that they would consider with favour any scheme for extending the area over which their degrees are available.

The question of the desirability of multiplying the number of centres for giving degrees is a wide one, into which I have no desire to enter. My only wish is that in any consideration of the question of establishing a new centre, *all* the facts regarding its sphere of action and the centres which already exist within what is claimed as that sphere should be known.

W. STEADMAN ALDIS

College of Physical Science, Newcastle-on-Tyne, March 24

The Suspected Intra-Mercurial Planet; Occultation of Kappa Geminorum

MARCH 21 was fine here, but with frequent clouds. I had several observations of the sun from 9 o'clock to 12, Dublin mean time, and then at 12.35, 1.35, 2.0, and 3.50, after which the sun become permanently clouded for the remainder of the day. The only object remarked was a small spot with a double nucleus near the western limb followed by a few very small spots.

March 22 was finer, and I observed at 8.30, 9.12, 10.20, 10.50, 11.25, 12.38, 1.35, 1.50, 2.55, 4.25, 5.8, and 5.33. The small spots of the previous day had completely disappeared, and broad bright lacunæ occupied their place. The large spot

© 1877 Nature Publishing Group